

**FEDERALLY ENFORCEABLE STATE  
OPERATING PERMIT (FESOP)  
OFFICE OF AIR MANAGEMENT**

**Building Materials Manufacturing Corporation  
505 North Roeske Avenue  
Michigan City, Indiana 46360**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: F 091-10904-00051	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

**SECTION A SOURCE SUMMARY**

- A.1 General Information [326 IAC 2-8-3(b)]
- A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]
- A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]
- A.4 FESOP Applicability [326 IAC 2-8-2]
- A.5 Prior Permit Conditions

**SECTION B GENERAL CONDITIONS**

- B.1 Permit No Defense [IC 13]
- B.2 Definitions [326 IAC 2-8-1]
- B.3 Permit Term [326 IAC 2-8-4(2)]
- B.4 Enforceability [326 IAC 2-8-6]
- B.5 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3 (h)]
- B.6 Severability [326 IAC 2-8-4(4)]
- B.7 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]
- B.8 Duty to Supplement and Provide Information [326 IAC 2-8-3(f)] [326 IAC 2-8-4(5)(E)]
- B.9 Compliance Order Issuance [326 IAC 2-8-5(b)]
- B.10 Compliance with Permit Conditions [326 IAC 2-8-4(5)(A)] [326 IAC 2-8-4(5)(B)]
- B.11 Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)]
- B.12 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]
- B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]
- B.14 Emergency Provisions [326 IAC 2-8-12]
- B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]
- B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination
- B.17 Permit Renewal [326 IAC 2-8-3(h)]
- B.18 Permit Amendment or Modification [326 IAC 2-8-10][326 IAC 2-8-11.1]
- B.19 Operational Flexibility [326 IAC 2-8-15]
- B.20 Construction Permit Requirement [326 IAC 2]
- B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)]
- B.22 Transfer of Ownership or Operation [326 IAC 2-8-10]
- B.23 Annual Fee Payment [326 IAC 2-8-4(6)] [326 IAC 2-8-16]
- B.24 Advanced Source Modification Approval [326 IAC 2-8-4(11)]

**SECTION C SOURCE OPERATION CONDITIONS**

**Emission Limitations and Standards [326 IAC 2-8-4(1)]**

- C.1 Overall Source Limit [326 IAC 2-8]
- C.2 Opacity [326 IAC 5-1]
- C.3 Open Burning [326 IAC 4-1][IC 13-17-9]
- C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]
- C.5 Fugitive Dust Emissions [326 IAC 6-4]
- C.6 Operation of Equipment [326 IAC 2-8-5(a)(4)]
- C.7 Stack Height [326 IAC 1-7]
- C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

**Testing Requirements [326 IAC 2-8-4(3)]**

- C.9 Performance Testing [326 IAC 3-6]

**Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]**

- C.10 Compliance Monitoring [326 IAC 2-8-4(3)] [326 IAC 2-8-5(a)(1)]
- C.11 Maintenance of Monitoring Equipment [326 IAC 2-8-4(3)(A)(iii)]
- C.12 Monitoring Methods [326 IAC 3]
- C.13 Pressure Gauge Specifications

**Corrective Actions and Response Steps [326 IAC 2-8-4] [326 IAC 2-8-5]**

- C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68.215]
- C.16 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-8-4]
- C.17 Actions Related to Noncompliance Demonstrated by a Stack Test

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

- C.18 Emission Statement [326 IAC 2-6] [326 IAC 2-8-4(3)]
- C.19 Monitoring Data Availability
- C.20 General Record Keeping Requirements [326 IAC 2-8-4(3)][326 IAC 2-8-5]
- C.21 General Reporting Requirements [326 IAC 2-8-4(3)(C)]

**Stratospheric Ozone Protection**

- C.22 Compliance with 40 CFR 82 and 326 IAC 22-1

**SECTION D.1 FACILITY OPERATION CONDITIONS - Process Operations**

**General Construction Conditions**

**Emission Limitations and Standards [326 IAC 2-8-4(1)]**

- D.1.4 General Provisions Relating to NSPS [326 IAC 12] [40 CFR 60, Subpart A]
- D.1.5 PM<sub>10</sub> [326 IAC 2-8-4]
- D.1.6 Particulate Matter [40 CFR Part 60.470, Subpart UU] [326 IAC 12]
- D.1.7 Particulate Matter (PM) [326 IAC 6-3-2(c)]
- D.1.8 Best Available Control Technology (BACT) [326 IAC 8-1-6]
- D.1.9 Thermal Oxidizer Operations
- D.1.10 Standards of Performance for Volatile Organic Liquid Storage Vessels [326 IAC 12] [40 CFR 60.116b]
- D.1.11 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

**Compliance Determination Requirements**

- D.1.12 Testing Requirements [NSPS Subpart UU] [326 IAC 12]
- D.1.13 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

**Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]**

- D.1.14 Particulate Matter (PM)
- D.1.15 Visible Emissions Notations
- D.1.16 Parametric Monitoring [NSPS Subpart UU]
- D.1.17 Baghouse Inspections
- D.1.18 Broken or Failed Bag Detection
- D.1.19 Thermal Oxidizer Monitoring (NSPS Subpart UU)

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**

- D.1.20 Record Keeping Requirements

**SECTION D.2 FACILITY OPERATION CONDITIONS - Process Combustion**

**General Construction Conditions**

**Emission Limitations and Standards [326 IAC 2-8-4(1)]**

- D.2.4 Particulate Matter [326 IAC 6-2-4]

**Compliance Determination Requirements**

D.2.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

**Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**

D.2.6 Record Keeping Requirements

**Certification Form**

**Emergency/Deviation Form**

**Natural Gas Fired Boiler Certification**

**Semi-Annual Compliance Monitoring Report Form**

## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-8-3(b)]

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The Permittee owns and operates a roof shingle manufacturing source.

Authorized individual: Fred Bright  
Source Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
Mailing Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
Phone Number: 973 - 628 - 3507  
SIC Code: 2952  
County Location: LaPorte  
County Status: Attainment for all criteria pollutants  
Source Status: Federally Enforceable State Operating Permit (FESOP)  
Minor Source, under PSD Rules;  
Minor Source, Section 112 of the Clean Air Act

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) flux asphalt heater, known as FAH-1, using waste heat from the thermal oxidizer, known as TO-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 60,197 pounds of asphalt per hour.
- (b) One (1) asphalt blow still, known as BS-1, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, to be installed in 1999, capacity: 60,197 pounds of blown asphalt per hour.
- (c) Two (2) bulk asphalt flux storage tanks, known as FST-1 and FST-2, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 250,000 gallons of asphalt, each.
- (d) Two (2) blown coating storage tanks, known as CST-1 and CST-2, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 42,000 gallons of coatings, each.
- (e) One (1) shingle machine, known as SM-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1 and also equipped with a baghouse for particulate matter control, known as V10, capacity: 320,729 pounds of asphalt shingles per hour.

- (f) Six (6) limestone filler silos, known as LFS-1 through LFS-6, to be installed in 1999, each equipped with a baghouse for particulate matter control, exhausted through V1 through V6, storage capacity: 300 tons of limestone each, throughput: 19,337.5 pounds of limestone per hour each.
- (g) One (1) cold filler hopper, known as CFH-1, to be installed in 1999, equipped with a baghouse for particulate matter control, exhausted through V7, storage capacity: 70 tons of limestone, throughput: 116,025 pounds of limestone per hour.
- (h) Two (2) sand silos, known as SS-1 and SS-2, to be installed in 1999, each equipped with a baghouse for particulate matter control, exhausted through V8 and V9, capacity: 125 tons of sand each, throughput 10,319.5 pounds of sand per hour each.
- (i) One (1) natural gas-fired boiler, known as BO-1, to be installed by December 1999, rated at 12.6 million British thermal units per hour, exhausted through Stack #S6.
- (j) One (1) natural gas-fired coating heater, known as CH-1, to be installed in 1999, rated at 7.5 million British thermal units per hour, exhausted through Stack #S3, process capacity: 250 gallons of coating asphalt per minute (15,000 gallons per hour).
- (k) One (1) natural gas-fired hot oil heater, known as HO-1, to be installed in 1999, rated at 6.0 million British thermal units per hour, exhausted through Stack #S5.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Combustion source flame safety purging on startup.
- (b) Application of oils, greases lubricants or other nonvolatile materials applied as temporary protective coatings.
- (c) Closed loop heating and cooling systems.
- (d) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1 percent by volume.
- (e) Forced and induced draft cooling tower system not regulated under a NESHAP.
- (f) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (g) Heat exchanger cleaning and repair.
- (h) Covered conveyors for limestone conveying of less than or equal to 7,200 tons per day for sources other than mineral processing plants constructed after August 31, 1983;
- (i) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (j) Stationary fire pumps.
- (k) Purge double block and bleed valves.

- (l) Filter or coalescer media changeout.
- (m) Four (4) natural gas-fired space heaters, known as H-1 through H-4, rated at 2.5 million British thermal units per hour each.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Federally Enforceable State Operating Permit (FESOP).

A.5 Prior Permit Conditions

- (a) This permit shall be used as the primary document for determining compliance with applicable requirements established by previously issued permits.
- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, including any term or condition from a previously issued construction or operation permit, IDEM, OAM, when applicable shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued.

## SECTION B

## GENERAL CONDITIONS

### B.1 Permit No Defense [IC 13]

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

### B.2 Definitions [326 IAC 2-8-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-7 shall prevail.

### B.3 Permit Term [326 IAC 2-8-4(2)]

This permit is issued for a fixed term of five (5) years from the effective date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3.

### B.4 Enforceability [326 IAC 2-8-6]

- (a) All terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM.
- (b) Unless otherwise stated, terms and conditions of this permit, including any provisions to limit the source's potential to emit, are enforceable by the United States Environmental Protection Agency (U.S. EPA) and citizens under the Clean Air Act.

### B.5 Termination of Right to Operate [326 IAC 2-8-9] [326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

### B.6 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

### B.7 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

### B.8 Duty to Supplement and Provide Information [326 IAC 2-8-3(f)] [326 IAC 2-8-4(5)(E)]

- (a) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) The Permittee shall furnish to IDEM, OAM, within a reasonable time, any information that IDEM, OAM, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.



- (c) Upon request, the Permittee shall also furnish to IDEM, OAM, copies of records required to be kept by this permit. If the Permittee wishes to assert a claim of confidentiality over any of the furnished records, the Permittee must furnish such records to IDEM, OAM, along with a claim of confidentiality under 326 IAC 17. If requested by IDEM, OAM, or the U.S. EPA, to furnish copies of requested records directly to U. S. EPA, and if the Permittee is making a claim of confidentiality regarding the furnished records, the Permittee must furnish such confidential records directly to the U.S. EPA along with a claim of confidentiality under 40 CFR 2, Subpart B.

B.9 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAM may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.10 Compliance with Permit Conditions [326 IAC 2-8-4(5)(A)] [326 IAC 2-8-4(5)(B)]

- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit, except those specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act and is grounds for:
  - (1) Enforcement action;
  - (2) Permit termination, revocation and reissuance, or modification; and
  - (3) Denial of a permit renewal application.
- (b) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B.11 Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)] [326 IAC 2-8-5(1)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted under this permit shall contain certification by a authorized individual of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, on the attached Certification Form, with each submittal.
- (c) An authorized individual is defined at 326 IAC 2-1.1-1(1).

B.12 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The certification shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than July 1 of each year to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
  - (1) The identification of each term or condition of this permit that is the basis of the certification;
  - (2) The compliance status;
  - (3) Whether compliance was based on continuous or intermittent data;
  - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
  - (5) Such other facts as specified in Sections D of this permit, IDEM, OAM, may require to determine the compliance status of the source.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)] [326 IAC 2-8-5(a)(1)]**

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this permit, including the following information on each facility:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAM, upon request and shall be subject to review and approval by IDEM, OAM. IDEM, OAM may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

**B.14 Emergency Provisions [326 IAC 2-8-12]**

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describes the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAM, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone No.: 1-800-451-6027 (ask for Office of Air Management, Compliance Section) or,  
Telephone No.: 317-233-5674 (ask for Compliance Section)  
Facsimile No.: 317-233-5967

Failure to notify IDEM, OAM, by telephone or facsimile within four (4) daytime business hours after the beginning of the emergency, or after the emergency is discovered or reasonably should have been discovered, shall constitute a violation of 326 IAC 2-8 and any other applicable rules. [326 IAC 2-8-12(f)]

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted notice either in writing or facsimile, of the emergency to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions) for sources subject to this rule after the effective date of this rule. This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) IDEM, OAM, may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAM, by telephone or facsimile of an emergency lasting more than one (1) hour in compliance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
  - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
  - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
    - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
    - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

**B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]**

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provision), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within ten (10) calendar days from the date of the discovery of the deviation.

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
  - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
  - (2) An emergency as defined in 326 IAC 2-7-1(12); or

- (3) Failure to implement elements of the Preventive Maintenance Plan unless such failure has caused or contributed to a deviation.
- (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred is a deviation.

- (c) Written notification shall be submitted on the attached Emergency/Deviation Occurrence Reporting Form or its substantial equivalent. The notification does not need to be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) Proper notice submittal under 326 IAC 2-7-16 satisfies the requirement of this subsection.

**B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination**  
[326 IAC 2-8-4(5)(C)] [326 IAC 2-8-7(a)] [326 IAC 2-8-8]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a FESOP modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)]
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAM, determines any of the following:
  - (1) That this permit contains a material mistake.
  - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
  - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAM, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAM, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAM, may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

**B.17 Permit Renewal** [326 IAC 2-8-3(h)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAM, and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015

Indianapolis, IN 46206-6015

(b) Timely Submittal of Permit Renewal [326 IAC 2-8-3]

(1) A timely renewal application is one that is:

(A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(B) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.

(2) If IDEM, OAM, upon receiving a timely and complete permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

(c) Right to Operate After Application for Renewal [326 IAC 2-8-9]

If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAM, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAM, any additional information identified as needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-8-10] [326 IAC 2-8-11.1]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1(1) only if a certification is required by the terms of the applicable rule.

(c) The Permittee may implement the administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.19 Operational Flexibility [326 IAC 2-8-15]

(a) The Permittee may make any change or changes at this source that are described in 326 IAC 2-8-15(b) through (d), without prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-1.1 has been obtained;

- (3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

- (4) The Permittee notifies the:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V  
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-8-15(b) through (d) and makes such records available, upon reasonable request, to public review.

Such records shall consist of all information required to be submitted to IDEM, OAM, in the notices specified in 326 IAC 2-8-15(b), (c)(1), and (d).

- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-8-15(a) and the following additional conditions:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted by the Permittee does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) Emission Trades [326 IAC 2-8-15(c)]  
The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).
- (d) Alternative Operating Scenarios [326 IAC 2-8-15(d)]  
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAM or U.S. EPA is required.
- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit

shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Construction Permit Requirement [326 IAC 2]

A modification, construction, or reconstruction shall be approved if required by and in accordance with the applicable provisions of 326 IAC 2.

B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAM, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements. [326 IAC 2-8-5(a)(4)]

B.22 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

The application which shall be submitted by the Permittee does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-11(b)(3)]

B.23 Annual Fee Payment [326 IAC 2-8-4(6)][326 IAC 2-8-16]

- (a) The Permittee shall pay annual fees to IDEM, OAM, within thirty (30) calendar days of



receipt of a billing. If the Permittee does not receive a bill from IDEM, OAM the applicable fee is due April 1 of each year.

- (b) Failure to pay may result in administrative enforcement action, or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-0425 (ask for OAM, Technical Support and Modeling Section), to determine the appropriate permit fee.

B.24 Advanced Source Modification Approval [326 IAC 2-8-4(11)]

The requirements to obtain a permit revision under 326 IAC 2-8-11.1 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3 if such modifications occur during the term of this permit.

## SECTION C

## SOURCE OPERATION CONDITIONS

Entire Source
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### Emissions Limitations and Standards [326 IAC 2-8-4(1)]

#### C.1 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit any regulated pollutant from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.
- (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(c) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

#### C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

#### C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 326 IAC 9-1-2. The provisions of 326 IAC 9-1-2 are not federally enforceable.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment [326 IAC 2-8-5(a)(4)]

Except as otherwise provided in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.7 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
  - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
  - (2) If there is a change in the following:
    - (A) Asbestos removal or demolition start date;
    - (B) Removal or demolition contractor; or
    - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
Asbestos Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

The notifications do not require a certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) **Procedures for Asbestos Emission Control**  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Indiana Accredited Asbestos Inspector**  
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

### **Testing Requirements [326 IAC 2-8-4(3)]**

#### **C.9 Performance Testing [326 IAC 3-6]**

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAM, within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

### **Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]**

#### **C.10 Compliance Monitoring [326 IAC 2-8-4(3)] [326 IAC 2-8-5(a)(1)]**

Compliance with applicable requirements shall be documented as required by this permit. All monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

in writing, prior to the end of the initial ninety (90) day compliance schedule with full justification of the reasons for inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**C.11 Maintenance of Monitoring Equipment [326 IAC 2-8-4(3)(A)(iii)]**

- (a) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.
- (b) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment. In addition, prompt corrective action shall be initiated whenever indicated.

**C.12 Monitoring Methods [326 IAC 3]**

Any monitoring or testing performed required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

**C.13 Pressure Gauge Specifications**

Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ( $\pm 2\%$ ) of full scale reading.

**Corrective Actions and Response Steps [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]**

**C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]**

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within 180 days from the date on which this source commences operation).

The ERP does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68.215]

If a regulated substance, subject to 40 CFR 68, is present at a source in more than a threshold quantity, 40 CFR 68 is an applicable requirement and the Permittee shall:

- (a) Submit:
  - (1) A compliance schedule for meeting the requirements of 40 CFR 68 by the date provided in 40 CFR 68.10(a); or
  - (2) As a part of the compliance certification submitted under 326 IAC 2-7-6(5), a certification statement that the source is in compliance with all the requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan (RMP); and
  - (3) A verification to IDEM, OAM, that a RMP or a revised plan was prepared and submitted as required by 40 CFR 68.
- (b) Provide annual certification to IDEM, OAM, that the Risk Management Plan is being properly implemented.

All documents submitted pursuant to this condition shall include the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

C.16 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-8-4][326 IAC 2-8-5] [326 IAC 1-6]

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
  - (1) This condition;
  - (2) The Compliance Determination Requirements in Section D of this permit;
  - (3) The Compliance Monitoring Requirements in Section D of this permit;
  - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and

- (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAM, upon request and shall be subject to review and approval by IDEM, OAM. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:
    - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
    - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
  - (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
  - (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
    - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
    - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;
    - (3) An automatic measurement was taken when the process was not operating; or
    - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
  - (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4] [326 IAC 2-8-5]**
- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]**

#### **C.18 Monitoring Data Availability**

- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements in (a) above.

#### **C.19 General Record Keeping Requirements [326 IAC 2-8-4(3)][326 IAC 2-8-5]**

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
  - (1) The date, place, and time of sampling or measurements;
  - (2) The dates analyses were performed;
  - (3) The company or entity performing the analyses;
  - (4) The analytic techniques or methods used;



- (5) The results of such analyses; and
- (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
  - (1) Copies of all reports required by this permit;
  - (2) All original strip chart recordings for continuous monitoring instrumentation;
  - (3) All calibration and maintenance records;
  - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.20 General Reporting Requirements [326 IAC 2-8-4(3)(C)]

- (a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Semi-annual Compliance Monitoring Report. Any deviation from the requirements and the date(s) of each deviation must be reported. The Compliance Monitoring Report shall include the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:  
  
Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.
- (d) Unless otherwise specified in this permit, any semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) All instances of deviations as described in Section B- Deviations from Permit Requirements Conditions must be clearly identified in such reports. The Emergency/Deviation Occurrence Report does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

### **Stratospheric Ozone Protection**

#### **C.21 Compliance with 40 CFR 82 and 326 IAC 22-1**

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices pursuant to 40 CFR 82.156
- (b) Equipment used during the maintenance, service, repair or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

**SECTION D.1 FACILITY OPERATION CONDITIONS**

**Facility Description [326 IAC 2-8-4(10)]:**

- (a) One (1) flux asphalt heater, known as FAH-1, using waste heat from the thermal oxidizer, known as TO-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 60,197 pounds of asphalt per hour.
- (b) One (1) asphalt blow still, known as BS-1, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, to be installed in 1999, capacity: 60,197 pounds of blown asphalt per hour.
- (c) Two (2) bulk asphalt flux storage tanks, known as FST-1 and FST-2, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 250,000 gallons of asphalt, each.
- (d) Two (2) blown coating storage tanks, known as CST-1 and CST-2, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 42,000 gallons of coatings, each.
- (e) One (1) shingle machine, known as SM-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1 and also equipped with a baghouse for particulate matter control, known as V10, capacity: 320,729 pounds of asphalt shingles per hour.
- (f) Six (6) limestone filler silos, known as LFS-1 through LFS-6, to be installed in 1999, each equipped with a baghouse for particulate matter control, exhausted through V1 through V6, storage capacity: 300 tons of limestone each, throughput: 19,337.5 pounds of limestone per hour each.
- (g) One (1) cold filler hopper, known as CFH-1, to be installed in 1999, equipped with a baghouse for particulate matter control, exhausted through V7, storage capacity: 70 tons of limestone, throughput: 116,025 pounds of limestone per hour.
- (h) Two (2) sand silos, known as SS-1 and SS-2, to be installed in 1999, each equipped with a baghouse for particulate matter control, exhausted through V8 and V9, capacity: 125 tons of sand each, throughput 10,319.5 pounds of sand per hour each.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

## Construction Conditions

### General Construction Conditions

- D.1.1 This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

### Effective Date of the Permit

- D.1.2 Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.
- D.1.3 All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

### Operation Conditions

#### Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.4 General Provisions Relating to NSPS [326 IAC 12] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12 apply to the facilities described in this section except when otherwise specified in 40 CFR 60 Subpart UU.

D.1.5 PM<sub>10</sub> [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4, PM<sub>10</sub> emissions shall not exceed the values stated in the following table. The combined PM<sub>10</sub> emissions from the listed facilities shall not exceed a total of 22.1 pounds per hour (96.8 tons per year). Compliance with these PM<sub>10</sub> limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) do not apply.

Operation	PM <sub>10</sub> Emission Rate (pounds per hour)
Thermal Oxidizer (Stack #S1)	3.17
Each Limestone Filler Silo (V1 - V6)	1.48 each
Cold Filler Hopper (V7)	3.64
Each Sand Silo (V8 & V9)	0.973 each
Shingle Machine (V10)	4.44

D.1.6 Particulate Matter [40 CFR Part 60.470, Subpart UU] [326 IAC 12]

Pursuant to NSPS Subpart UU:

- (a) the PM emissions from the shingle production line shall not exceed 0.04 kilograms per megagram of asphalt shingle produced and the opacity shall be limited to twenty percent (20%).
- (b) the PM emissions from the blow still shall not exceed:
- (1) 0.67 kilograms per megagram of asphalt charged to the still when operating with a catalyst, or
  - (2) 0.60 kilograms per megagram of asphalt charged to the still when operating without a catalyst.

#### D.1.7 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The allowable PM emission rate from the asphalt shingle manufacturing facilities shall not exceed the pounds per hour limits specified below when operating at the specified process weight rates in pounds per hour.

The pounds per hour limitations were calculated with the following equations:

- (a) Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

and

- (b) Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

Operation	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)
Blow Still (Stack #S1)	30.1	40.0
Each Limestone Filler Silo (V1 - V6)	9.67	18.75
Cold Filler Hopper (V7)	58.0	46.0
Each Sand Silo (V8 & V9)	5.16	12.3
Shingle Machine (V10)	160.4	56.1
Asphalt Coating Process (Stack #S1)	30.1	40.0

- (c) Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), the total allowable PM emission rate from these facilities shall not exceed 56.4 pounds per hour. This PM limit is equivalent to 247 tons per year which makes 326 IAC 2-2 not applicable.

#### D.1.8 Best Available Control Technology (BACT) [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New facilities: General reduction requirements):

- (a) BACT has been determined to be the thermal oxidizer, and
- (b) The volatile organic compound (VOC) emissions shall not exceed 98.9 tons per twelve (12) consecutive month period for all facilities equipped with the thermal oxidizer to be calculated by the following equation:

$$\text{VOC emissions} = \text{Input VOC} * (1 - \text{overall control efficiency of the thermal oxidizer}).$$

#### D.1.9 Thermal Oxidizer Operation

The thermal oxidizer shall operate at all times that any of the facilities listed in Section D.1, except the silos and cold filler hopper (items f through h) are operated. When operating, the thermal oxidizer shall maintain a minimum operating temperature of 1,200 degrees Fahrenheit or a temperature, fan amperage and duct velocity determined in a stack test to maintain a minimum ninety-six and three tenths percent (96.3%) overall (capture and destruction) control of the volatile organic

compound (VOC).

**D.1.10 Standards of Performance for Volatile Organic Liquid Storage Vessels [326 IAC 12]  
[40 CFR 60.116b]**

The two (2) 42,000 gallon blown coating storage tanks and the two (2) 250,000 gallon bulk asphalt flux storage tanks shall comply with the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR Part 60.116b, Subpart Kb). 40 CFR Part 60.116b paragraphs (a) and (b) require the Permittee to maintain accessible records showing the dimension of each storage vessel and an analysis showing the capacity of the storage vessels.

**D.1.11 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

**Compliance Determination Requirements**

**D.1.12 Testing Requirements [NSPS Subpart UU] [326 IAC 12]**

- (a) Part Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) and 326 IAC 12 (New Source Performance Standards) compliance tests for the shingle machine shall be performed for opacity, PM and PM<sub>10</sub> within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner. The Office of Air Management (OAM) shall be notified of the actual test date at least two (2) weeks prior to the date, a test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test, and all test reports must be received by the OAM within 45 days of completion of the testing, pursuant to that rule.
- (b) Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) and 326 IAC 12 (New Source Performance Standards) compliance tests for the blow still shall be performed for PM and PM<sub>10</sub> within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The testing shall be performed when a catalyst is utilized. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner. The Office of Air Management (OAM) shall be notified of the actual test date at least two (2) weeks prior to the date, a test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test, and all test reports must be received by the OAM within 45 days of completion of the testing, pursuant to that rule.
- (c) These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facilities are in compliance.

**D.1.13 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]**

- (a) No later than 180 days after initial start-up, the Permittee shall perform PM and PM<sub>10</sub> testing of any two (2) of six (6) limestone filler silos, exhaust through V1 - V6, one (1) of the two (2) sand silos, exhausting through V8 and V9, the cold filler hopper, the thermal oxidizer exhaust Stack #S1 utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM<sub>10</sub>, or other methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facilities are in compliance.

- (b) No later than 180 days after initial start-up, the Permittee shall perform VOC testing of the thermal oxidizer exhausting through Stack #S1 to determine the capture and destruction efficiencies for overall VOC control utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facilities are in compliance.
- (c) The Permittee is not required to test the storage tanks by this permit. However, IDEM may require compliance testing when necessary to determine if these facilities are in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

#### **Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]**

##### **D.1.14 Particulate Matter (PM)**

Pursuant to NSPS Subpart UU, the thermal oxidizer and the baghouse for PM control shall be in operation at all times when the asphalt blowing processes and shingle machine are in operation.

##### **D.1.15 Visible Emissions Notations**

- (a) Daily visible emission notations of the thermal oxidizer stack exhaust S#1 and baghouse exhausts V1 through V10 shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

##### **D.1.16 Parametric Monitoring (NSPS Subpart UU)**

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the asphalt shingle manufacturing processes, at least once per day when the asphalt shingle manufacturing processes are in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 0.5 and 5.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

#### D.1.17 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the asphalt shingle manufacturing operation when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.

#### D.1.18 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

#### D.1.19 Thermal Oxidizer Monitoring (NSPS Subpart UU)

- (a) The Permittee shall continuously monitor and record the temperature in the combustion zone of the thermal oxidizer, known as TO-1. The monitoring instrument shall have an accuracy of  $\pm 10$  degrees Celsius over its range.
- (b) The Permittee shall record the exhaust temperature of the thermal oxidizer, at least once daily when the asphalt shingle manufacturing processes are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the exhaust temperature shall be maintained at a minimum operating temperature of 1,200 degrees Fahrenheit or a temperature range determined by the latest stack test to maintain at least 96.3 percent destruction of VOC captured. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when the temperature reading is outside of the specified temperature or range of temperatures for any one reading.

### **Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**

#### D.1.20 Record Keeping Requirements

- (a) To document compliance with Condition D.1.8, the Permittee shall maintain records at the facility of the materials used that contain any VOCs. The records shall be complete and sufficient to establish compliance with the VOC usage limit pursuant to 326 IAC 8-1-6.
- (b) To document compliance with Condition D.1.15, the Permittee shall maintain records of daily visible emission notations of the thermal oxidizer stack exhaust S#1 and baghouse exhausts V1 through V10.
- (c) To document compliance with Condition D.1.16, the Permittee shall maintain the following:
  - (1) Daily records of the following operational parameters during normal operation when venting to the atmosphere:
    - (A) Inlet and outlet differential static pressure; and



- (B) Cleaning cycle: frequency and differential pressure.
- (2) Documentation of all response steps implemented, per event.
- (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
- (4) Quality Assurance/Quality Control (QA/QC) procedures.
- (5) Operator standard operating procedures (SOP).
- (6) Manufacturer's specifications or its equivalent.
- (7) Equipment "troubleshooting" contingency plan.
- (8) Documentation of the dates vents are redirected.
- (d) To document compliance with Condition D.1.17, the Permittee shall maintain records of the results of the inspections required under Condition D.1.17 and the dates the vents are redirected.
- (e) To document compliance with Condition D.1.19, the Permittee shall
  - (1) Maintain daily records of the exhaust temperature of the thermal oxidizer, and
  - (2) Continuously record the temperature in the combustion zone of the thermal oxidizer, known as TO-1.
- (f) The Permittee shall maintain accessible records showing the dimension of the storage tank and an analysis showing the capacity of the storage vessel. Records shall be kept for the life of the storage tanks.
- (g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION D.2

## FACILITY OPERATION CONDITIONS

### Facility Description [326 IAC 2-8-4(10)]:

- (i) One (1) natural gas-fired boiler, known as BO-1, to be installed by December 1999, rated at 12.6 million British thermal units per hour, exhausted through Stack #S6.
- (j) One (1) natural gas-fired coating heater, known as CH-1, to be installed in 1999, rated at 7.5 million British thermal units per hour, exhausted through Stack #S3, process capacity: 250 gallons of coating asphalt per minute (15,000 gallons per hour).
- (k) One (1) natural gas-fired hot oil heater, known as HO-1, to be installed in 1999, rated at 6.0 million British thermal units per hour, exhausted through Stack #S5.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

### Construction Conditions

#### General Construction Conditions

- D.2.1 This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

#### Effective Date of the Permit

- D.2.2 Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.
- D.2.3 All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

#### Operation Conditions

#### Emission Limitations and Standards [326 IAC 2-8-4(1)]

##### D.2.4 Particulate Matter Limitation [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4, particulate emissions from 12.6 million British thermal units per hour boiler (BO-1) shall in no case exceed 0.564 pounds of particulate matter per million British thermal units heat input. The particulate matter emission limitation is calculated with the following equation pursuant to 326 IAC 6-2-4. The particulate matter (PM) emissions shall be limited to:

$$Pt = 1.09/Q^{0.26}$$

where, Q = the total source maximum operating capacity in million British thermal units per hour.

### **Compliance Determination Requirements**

#### **D.2.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

The Permittee is not required to test these facilities by this permit. However, IDEM may require compliance testing when necessary to determine if these facilities are in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

### **Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]**

#### **D.2.6 Record Keeping Requirements**

The Permittee shall maintain daily records of the amount and type of fuel burned in 12.6 million British thermal units per hour boiler, BO-1 pursuant to 40 CFR 60 Subpart Dc.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
CERTIFICATION**

Source Name: Building Materials Manufacturing Corporation  
Source Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
Mailing Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP No.: F 091-10904-00051

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.**

Please check what document is being certified:

- 9 Annual Compliance Certification Letter
- 9 Test Result (specify) \_\_\_\_\_
- 9 Report (specify) \_\_\_\_\_
- 9 Notification (specify) \_\_\_\_\_
- 9 Other (specify) \_\_\_\_\_

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION  
P.O. Box 6015  
100 North Senate Avenue  
Indianapolis, Indiana 46206-6015  
Phone: 317-233-5674  
Fax: 317-233-5967**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
EMERGENCY/DEVIATION OCCURRENCE REPORT**

Source Name: Building Materials Manufacturing Corporation  
Source Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
Mailing Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP No.: F 091-10904-00051

**This form consists of 2 pages**

**Page 1 of 2**

Check either No. 1 or No.2	
<b>9</b>	1. This is an emergency as defined in 326 IAC 2-7-1(12) The Permittee must notify the Office of Air Management (OAM), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and The Permittee must submit notice in writing or by facsimile within two (2) days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16
<b>9</b>	2. This is a deviation, reportable per 326 IAC 2-8-4(3)(C) The Permittee must submit notice in writing within ten (10) calendar days

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency/Deviation:
Describe the cause of the Emergency/Deviation:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency/Deviation started:
Date/Time Emergency/Deviation was corrected:
Was the facility being properly operated at the time of the emergency/deviation?    Y    N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency/deviation:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
NATURAL GAS FIRED BOILER CERTIFICATION**

Source Name: Building Materials Manufacturing Corporation  
Source Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
Mailing Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP No.: F 091-10904-00051

**This certification shall be included when submitting monitoring, testing reports/results  
or other documents as required by this permit.**

Report period

Beginning: \_\_\_\_\_

Ending: \_\_\_\_\_

Boiler Affected

Alternate Fuel

Days burning alternate fuel  
From To

*(can omit boiler affected if only one gas boiler at this plant)*

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Date: \_\_\_\_\_

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
SEMI-ANNUAL COMPLIANCE MONITORING REPORT**

Source Name: Building Materials Manufacturing Corporation  
Source Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
Mailing Address: 505 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP No.: F 091-10904-00051

**Months:** \_\_\_\_\_ **to** \_\_\_\_\_ **Year:** \_\_\_\_\_

This report is an affirmation that the source has met all the compliance monitoring requirements stated in this permit. This report shall be submitted semi-annually. Any deviation from the compliance monitoring requirements and the date(s) of each deviation must be reported. Additional pages may be attached if necessary. This form can be supplemented by attaching the Emergency/Deviation Occurrence Report. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

**9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.**

**9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD.**

<b>Compliance Monitoring Requirement</b> (eg. Permit Condition D.1.3)	<b>Number of Deviations</b>	<b>Date of each Deviation</b>

Form Completed By: \_\_\_\_\_

Title/Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Attach a signed certification to complete this report.



## **Subpart Dc-Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

Source: 55 FR 37683, Sept. 12, 1990, unless otherwise noted.

### **§ 60.40c Applicability and delegation of authority.**

(a) The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

### **§ 60.41c Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society for Testing and Materials in ASTM D388-77, "Standard Specification for Classification of Coals by Rank" (incorporated by reference-see § 60.17); coal refuse; and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Cogeneration steam generating unit means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine,

or kiln) provides exhaust gas to a steam generating unit.

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils" (incorporated by reference-see § 60.17).

Dry flue gas desulfurization technology means a sulfur dioxide (SO<sub>2</sub>) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO<sub>2</sub> control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined

by the physical design and characteristics of the steam generating unit.

Natural gas means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835-86, "Standard Specification for Liquefied Petroleum Gases" (incorporated by reference-see § 60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO<sub>2</sub> emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils" (incorporated by reference-see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Wet flue gas desulfurization technology means an SO<sub>2</sub> control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO<sub>2</sub>.

Wood means wood, wood residue, bark, or any derivative fuel

or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

**§ 60.42c Standard for sulfur dioxide.**

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner the operator of an affected facility that combusts only coal shall neither:

- (1) cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction);
- nor (2) cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 90 percent SO<sub>2</sub> reduction requirement specified in this paragraph and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 20 percent (0.20) of the potential SO<sub>2</sub> emission rate (80 percent reduction);

nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is fired with coal refuse, the affected facility is subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 90 percent SO<sub>2</sub> reduction requirement specified in paragraph (a) of this section and the emission limit determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO<sub>2</sub> emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 50 percent (0.50) of the potential SO<sub>2</sub> emission rate (50 percent reduction);

nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 260 ng/J (0.60 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO<sub>2</sub> reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under this paragraph.

(1) Affected facilities that have a heat input capacity of 22 MW (75 million Btu/hr) or less.

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a Federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area.

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

(d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of the following:

(1) The percent of potential SO<sub>2</sub> emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel,

(ii) Has a heat input capacity greater than 22 MW (75 million Btu/hr), and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$Es = (KaHa + KbHb + KcHc) / (Ha + Hb + Hc)$$

where:

Es is the SO<sub>2</sub> emission limit, expressed in ng/J or lb/million Btu heat input,

Ka is 520 ng/J (1.2 lb/million Btu),

Kb is 260 ng/J (0.60 lb/million Btu),

Kc is 215 ng/J (0.50 lb/million Btu),

Ha is the heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [million Btu]

Hb is the heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (million Btu)

Hc is the heat input from the combustion of oil, in J (million Btu).

(f) Reduction in the potential SO<sub>2</sub> emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO<sub>2</sub> emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO<sub>2</sub> control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), or (3) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(i) The SO<sub>2</sub> emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

#### **§ 60.43c Standard for particulate matter.**

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator

of an affected facility that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.05 lb/million Btu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

#### **§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.**

(a) Except as provided in paragraphs (g) and (h) of this section and in § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance

test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO<sub>2</sub> emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) and § 60.8, compliance with the percent reduction requirements and SO<sub>2</sub> emission limits under § 60.42c is based on the average percent reduction and the average SO<sub>2</sub> emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO<sub>2</sub> emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 are used to determine the hourly SO<sub>2</sub> emission rate (E<sub>ho</sub>) and the 30-day average SO<sub>2</sub> emission rate (E<sub>ao</sub>). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system (CEMS). Method 19 shall be used to calculate E<sub>ao</sub> when using daily fuel sampling or Method 6B.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E<sub>ho</sub> (E<sub>hoo</sub>) is used in Equation 19-19 of Method 19 to compute the adjusted E<sub>ao</sub> (E<sub>ao0</sub>). The E<sub>hoo</sub> is computed using the following formula:

$$E_{hoo} = [E_{ho} - E_w(1 - X_k)] / X_k$$

where:

E<sub>hoo</sub> is the adjusted E<sub>ho</sub>, ng/J (lb/million Btu)

E<sub>ho</sub> is the hourly SO<sub>2</sub> emission rate, ng/J (lb/million Btu)

E<sub>w</sub> is the SO<sub>2</sub> concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9, ng/J (lb/million Btu). The value E<sub>w</sub> for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E<sub>w</sub> if the owner or operator elects to assume E<sub>w</sub>=0.

X<sub>k</sub> is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) [where percent reduction is not required] does not have to measure the parameters E<sub>w</sub> or X<sub>k</sub> if the owner or operator of the affected facility elects



to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19.

(f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the SO<sub>2</sub> emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO<sub>2</sub> emission rate is computed using the following formula:

$$\%Ps = 100(1 - \%Rg/100)(1 - \%Rf/100)$$

where

%Ps is the percent of potential SO<sub>2</sub> emission rate, in percent

%Rg is the SO<sub>2</sub> removal efficiency of the control device as determined by Method 19, in percent

%Rf is the SO<sub>2</sub> removal efficiency of fuel pretreatment as determined by Method 19, in percent

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the %Ps, an adjusted %Rg (%Rgo) is computed from E<sub>aoo</sub> from paragraph (e)(1) of this section and an adjusted average SO<sub>2</sub> inlet rate (E<sub>aio</sub>) using the following formula:

$$\%Rgo = 100 [1.0 - E_{aoo}/E_{aio}]$$

where:

%Rgo is the adjusted %Rg, in percent

E<sub>aoo</sub> is the adjusted E<sub>aoo</sub>, ng/J (lb/million Btu)

E<sub>aio</sub> is the adjusted average SO<sub>2</sub> inlet rate, ng/J (lb/million Btu)

(ii) To compute E<sub>aio</sub>, an adjusted hourly SO<sub>2</sub> inlet rate (E<sub>hio</sub>) is used. The E<sub>hio</sub> is computed using the following formula:

$$E_{hio} = [E_{hi} - E_w (1 - X_k)] / X_k$$

where:

E<sub>hio</sub> is the adjusted E<sub>hi</sub>, ng/J (lb/million Btu)

E<sub>hi</sub> is the hourly SO<sub>2</sub> inlet rate, ng/J (lb/million Btu)

E<sub>w</sub> is the SO<sub>2</sub> concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19, ng/J (lb/million Btu). The value E<sub>w</sub> for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E<sub>w</sub> if the owner or operator elects to assume E<sub>w</sub> = 0.

X<sub>k</sub> is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial

performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO<sub>2</sub> standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour averaged firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid SO<sub>2</sub> emissions data in calculating %Ps and Eho under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating %Ps or Eho pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

**§ 60.45c Compliance and performance test methods and procedures for particulate matter.**

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods.

(1) Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry square cubic meters (dscm) [60 dry square cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(2) Method 3 shall be used for gas analysis when applying Method 5, Method 5B, or Method 17.

(3) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of PM as follows:

(i) Method 5 may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 EC (320 EF). The procedures of Sections 2.1 and 2.3 of Method 5B may be used in Method 17 only if Method 17 is used in conjunction with a wet scrubber system. Method 17 shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B may be used in conjunction with a wet scrubber system.

(4) For Method 5 or Method 5B, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 EC (320 EF).

(5) For determination of PM emissions, an oxygen or carbon dioxide measurement shall be obtained simultaneously with each run of Method 5, Method 5B, or Method 17 by traversing the duct at the same sampling location.

(6) For each run using Method 5, Method 5B, or Method 17, the emission rates expressed in ng/J (lb/million Btu) heat input shall be determined using:

(i) The oxygen or carbon dioxide measurements and PM measurements obtained under this section,

(ii) The dry basis F-factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 (appendix A).

(7) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

#### **§ 60.46c Emission monitoring for sulfur dioxide**

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO<sub>2</sub> emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO<sub>2</sub> concentrations and either oxygen or carbon dioxide concentrations at the outlet of the SO<sub>2</sub> control device (or the outlet of the steam generating unit if no SO<sub>2</sub> control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c

shall measure SO<sub>2</sub> concentrations and either oxygen or carbon dioxide concentrations at both the inlet and outlet of the SO<sub>2</sub> control device.

(b) The 1-hour average SO<sub>2</sub> emission rates measured by a CEM shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO<sub>2</sub> emission rate must be based on at least 30 minutes of operation and include at least 2 data points representing two 15-minute periods. Hourly SO<sub>2</sub> emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (Appendix B).

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (Appendix F).

(3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the SO<sub>2</sub> CEMS at the inlet to the SO<sub>2</sub> control device shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted, and the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device shall be 50 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEM at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by using Method 6B. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average SO<sub>2</sub> input rate.

(2) As an alternative fuel sampling procedure for affected

facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B may be used in lieu of CEMS to measure SO<sub>2</sub> at the inlet or outlet of the SO<sub>2</sub> control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable SO<sub>2</sub> and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in § 3.2 and the applicable procedures in section 7 of Performance Specification 2 (Appendix B). Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, as described under § 60.48c(f) (1), (2), or (3), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

#### **§ 60.47c Emission monitoring for particulate matter.**

(a) The owner or operator of an affected facility combusting coal, residual oil, or wood that is subject to the opacity standards

under § 60.43c shall install, calibrate, maintain, and operate a CEMS for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system.

(b) All CEMS for measuring opacity shall be operated in accordance with the applicable procedures under Performance Specification 1 (appendix B). The span value of the opacity CEMS shall be between 60 and 80 percent.

#### **§ 60.48c Reporting and recordkeeping requirements.**

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO<sub>2</sub> emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS using the applicable performance specifications in appendix B.

(c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under § 60.43c(c) shall submit excess emission reports for any calendar quarter for which there are excess emissions from the affected facility. If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test, unless no excess emissions occur during that quarter. The initial semiannual

report shall be postmarked by the 30th day of the sixth month following the completion of the initial performance test, or following the date of the previous quarterly report, as applicable. Each subsequent quarterly or semiannual report shall be postmarked by the 30th day following the end of the reporting period.

(d) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit quarterly reports to the Administrator. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test. Each subsequently quarterly report shall be postmarked by the 30th day following the end of the reporting period.

(e) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.43c shall keep records and submit quarterly reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO<sub>2</sub> emission rate calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO<sub>2</sub> or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described

under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the quarterly report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the quarter.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier; and

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

(h) The owner or operator of each affected facility subject to a Federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.



## **Subpart Dc-Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units**

Source: 55 FR 37683, Sept. 12, 1990, unless otherwise noted.

### **§ 60.40c Applicability and delegation of authority.**

(a) The affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

### **§ 60.41c Definitions.**

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society for Testing and Materials in ASTM D388-77, "Standard Specification for Classification of Coals by Rank" (incorporated by reference-see § 60.17); coal refuse; and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Cogeneration steam generating unit means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine,

or kiln) provides exhaust gas to a steam generating unit.

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils" (incorporated by reference-see § 60.17).

Dry flue gas desulfurization technology means a sulfur dioxide (SO<sub>2</sub>) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO<sub>2</sub> control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined

by the physical design and characteristics of the steam generating unit.

Natural gas means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835-86, "Standard Specification for Liquefied Petroleum Gases" (incorporated by reference-see § 60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO<sub>2</sub> emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils" (incorporated by reference-see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Wet flue gas desulfurization technology means an SO<sub>2</sub> control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO<sub>2</sub>.

Wood means wood, wood residue, bark, or any derivative fuel

or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

**§ 60.42c Standard for sulfur dioxide.**

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner the operator of an affected facility that combusts only coal shall neither:

- (1) cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 10 percent (0.10) of the potential SO<sub>2</sub> emission rate (90 percent reduction);
- nor (2) cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 90 percent SO<sub>2</sub> reduction requirement specified in this paragraph and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 20 percent (0.20) of the potential SO<sub>2</sub> emission rate (80 percent reduction);

nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is fired with coal refuse, the affected facility is subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 90 percent SO<sub>2</sub> reduction requirement specified in paragraph (a) of this section and the emission limit determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO<sub>2</sub> emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 50 percent (0.50) of the potential SO<sub>2</sub> emission rate (50 percent reduction);

nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 260 ng/J (0.60 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO<sub>2</sub> reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under this paragraph.

(1) Affected facilities that have a heat input capacity of 22 MW (75 million Btu/hr) or less.

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a Federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area.

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

(d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of the following:

(1) The percent of potential SO<sub>2</sub> emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel,

(ii) Has a heat input capacity greater than 22 MW (75 million Btu/hr), and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$Es = (KaHa + KbHb + KcHc) / (Ha + Hb + Hc)$$

where:

Es is the SO<sub>2</sub> emission limit, expressed in ng/J or lb/million Btu heat input,

Ka is 520 ng/J (1.2 lb/million Btu),

Kb is 260 ng/J (0.60 lb/million Btu),

Kc is 215 ng/J (0.50 lb/million Btu),

Ha is the heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [million Btu]

Hb is the heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (million Btu)

Hc is the heat input from the combustion of oil, in J (million Btu).

(f) Reduction in the potential SO<sub>2</sub> emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO<sub>2</sub> emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO<sub>2</sub> control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), or (3) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(i) The SO<sub>2</sub> emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

#### **§ 60.43c Standard for particulate matter.**

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator

of an affected facility that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.05 lb/million Btu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

#### **§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.**

(a) Except as provided in paragraphs (g) and (h) of this section and in § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance

test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO<sub>2</sub> emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) and § 60.8, compliance with the percent reduction requirements and SO<sub>2</sub> emission limits under § 60.42c is based on the average percent reduction and the average SO<sub>2</sub> emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO<sub>2</sub> emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 are used to determine the hourly SO<sub>2</sub> emission rate (E<sub>ho</sub>) and the 30-day average SO<sub>2</sub> emission rate (E<sub>ao</sub>). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system (CEMS). Method 19 shall be used to calculate E<sub>ao</sub> when using daily fuel sampling or Method 6B.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E<sub>ho</sub> (E<sub>hoo</sub>) is used in Equation 19-19 of Method 19 to compute the adjusted E<sub>ao</sub> (E<sub>ao0</sub>). The E<sub>hoo</sub> is computed using the following formula:

$$E_{hoo} = [E_{ho} - E_w(1 - X_k)] / X_k$$

where:

E<sub>hoo</sub> is the adjusted E<sub>ho</sub>, ng/J (lb/million Btu)

E<sub>ho</sub> is the hourly SO<sub>2</sub> emission rate, ng/J (lb/million Btu)

E<sub>w</sub> is the SO<sub>2</sub> concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9, ng/J (lb/million Btu). The value E<sub>w</sub> for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E<sub>w</sub> if the owner or operator elects to assume E<sub>w</sub>=0.

X<sub>k</sub> is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) [where percent reduction is not required] does not have to measure the parameters E<sub>w</sub> or X<sub>k</sub> if the owner or operator of the affected facility elects



to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19.

(f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the SO<sub>2</sub> emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO<sub>2</sub> emission rate is computed using the following formula:

$$\%Ps = 100(1 - \%Rg/100)(1 - \%Rf/100)$$

where

%Ps is the percent of potential SO<sub>2</sub> emission rate, in percent

%Rg is the SO<sub>2</sub> removal efficiency of the control device as determined by Method 19, in percent

%Rf is the SO<sub>2</sub> removal efficiency of fuel pretreatment as determined by Method 19, in percent

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the %Ps, an adjusted %Rg (%Rgo) is computed from E<sub>aoo</sub> from paragraph (e)(1) of this section and an adjusted average SO<sub>2</sub> inlet rate (E<sub>aio</sub>) using the following formula:

$$\%Rgo = 100 [1.0 - E_{aoo}/E_{aio}]$$

where:

%Rgo is the adjusted %Rg, in percent

E<sub>aoo</sub> is the adjusted E<sub>aoo</sub>, ng/J (lb/million Btu)

E<sub>aio</sub> is the adjusted average SO<sub>2</sub> inlet rate, ng/J (lb/million Btu)

(ii) To compute E<sub>aio</sub>, an adjusted hourly SO<sub>2</sub> inlet rate (E<sub>hio</sub>) is used. The E<sub>hio</sub> is computed using the following formula:

$$E_{hio} = [E_{hi} - E_w (1 - X_k)] / X_k$$

where:

E<sub>hio</sub> is the adjusted E<sub>hi</sub>, ng/J (lb/million Btu)

E<sub>hi</sub> is the hourly SO<sub>2</sub> inlet rate, ng/J (lb/million Btu)

E<sub>w</sub> is the SO<sub>2</sub> concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19, ng/J (lb/million Btu). The value E<sub>w</sub> for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E<sub>w</sub> if the owner or operator elects to assume E<sub>w</sub> = 0.

X<sub>k</sub> is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial

performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO<sub>2</sub> standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour averaged firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid SO<sub>2</sub> emissions data in calculating %Ps and E<sub>ho</sub> under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating %Ps or E<sub>ho</sub> pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

**§ 60.45c Compliance and performance test methods and procedures for particulate matter.**

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods.

(1) Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry square cubic meters (dscm) [60 dry square cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(2) Method 3 shall be used for gas analysis when applying Method 5, Method 5B, or Method 17.

(3) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of PM as follows:

(i) Method 5 may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 EC (320 EF). The procedures of Sections 2.1 and 2.3 of Method 5B may be used in Method 17 only if Method 17 is used in conjunction with a wet scrubber system. Method 17 shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B may be used in conjunction with a wet scrubber system.

(4) For Method 5 or Method 5B, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 EC (320 EF).

(5) For determination of PM emissions, an oxygen or carbon dioxide measurement shall be obtained simultaneously with each run of Method 5, Method 5B, or Method 17 by traversing the duct at the same sampling location.

(6) For each run using Method 5, Method 5B, or Method 17, the emission rates expressed in ng/J (lb/million Btu) heat input shall be determined using:

(i) The oxygen or carbon dioxide measurements and PM measurements obtained under this section,

(ii) The dry basis F-factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 (appendix A).

(7) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

#### **§ 60.46c Emission monitoring for sulfur dioxide**

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO<sub>2</sub> emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO<sub>2</sub> concentrations and either oxygen or carbon dioxide concentrations at the outlet of the SO<sub>2</sub> control device (or the outlet of the steam generating unit if no SO<sub>2</sub> control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c

shall measure SO<sub>2</sub> concentrations and either oxygen or carbon dioxide concentrations at both the inlet and outlet of the SO<sub>2</sub> control device.

(b) The 1-hour average SO<sub>2</sub> emission rates measured by a CEM shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO<sub>2</sub> emission rate must be based on at least 30 minutes of operation and include at least 2 data points representing two 15-minute periods. Hourly SO<sub>2</sub> emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (Appendix B).

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (Appendix F).

(3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the SO<sub>2</sub> CEMS at the inlet to the SO<sub>2</sub> control device shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted, and the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device shall be 50 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the SO<sub>2</sub> CEMS at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) shall be 125 percent of the maximum estimated hourly potential SO<sub>2</sub> emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEM at the outlet from the SO<sub>2</sub> control device (or outlet of the steam generating unit if no SO<sub>2</sub> control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO<sub>2</sub> emission rate by using Method 6B. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average SO<sub>2</sub> input rate.

(2) As an alternative fuel sampling procedure for affected

facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B may be used in lieu of CEMS to measure SO<sub>2</sub> at the inlet or outlet of the SO<sub>2</sub> control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable SO<sub>2</sub> and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in § 3.2 and the applicable procedures in section 7 of Performance Specification 2 (Appendix B). Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, as described under § 60.48c(f) (1), (2), or (3), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

#### **§ 60.47c Emission monitoring for particulate matter.**

(a) The owner or operator of an affected facility combusting coal, residual oil, or wood that is subject to the opacity standards

under § 60.43c shall install, calibrate, maintain, and operate a CEMS for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system.

(b) All CEMS for measuring opacity shall be operated in accordance with the applicable procedures under Performance Specification 1 (appendix B). The span value of the opacity CEMS shall be between 60 and 80 percent.

#### **§ 60.48c Reporting and recordkeeping requirements.**

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO<sub>2</sub> emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS using the applicable performance specifications in appendix B.

(c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under § 60.43c(c) shall submit excess emission reports for any calendar quarter for which there are excess emissions from the affected facility. If there are no excess emissions during the calendar quarter, the owner or operator shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test, unless no excess emissions occur during that quarter. The initial semiannual

report shall be postmarked by the 30th day of the sixth month following the completion of the initial performance test, or following the date of the previous quarterly report, as applicable. Each subsequent quarterly or semiannual report shall be postmarked by the 30th day following the end of the reporting period.

(d) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit quarterly reports to the Administrator. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test. Each subsequently quarterly report shall be postmarked by the 30th day following the end of the reporting period.

(e) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.43c shall keep records and submit quarterly reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO<sub>2</sub> emission rate calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO<sub>2</sub> or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described

under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the quarterly report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the quarter.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier; and

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

(h) The owner or operator of each affected facility subject to a Federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.



**Subpart Kb-Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984**

Source: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

**§ 60.110b Applicability and designation of affected facility.**

(a) Except as provided in paragraphs (b), (c), and (d) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 40 cubic meters (m<sup>3</sup>) that is used to store volatile organic liquids (VOL's) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) Except as specified in paragraphs (a) and (b) of § 60.116b, storage vessels with design capacity less than 75 m<sup>3</sup> are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(c) Except as specified in paragraphs (a) and (b) of § 60.116b, vessels either with a capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 3.5 kPa or with a capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure less than 15.0 kPa are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(d) This subpart does not apply to the following:

- (1) Vessels at coke oven by-product plants.
- (2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.
- (3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.
- (4) Vessels with a design capacity less than or equal to 1,589.874 m<sup>3</sup> used for petroleum or condensate stored, processed, or treated prior to custody transfer.
- (5) Vessels located at bulk gasoline plants.
- (6) Storage vessels located at gasoline service stations.
- (7) Vessels used to store beverage alcohol.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

**§ 60.111b Definitions.**

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

(a) Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local

law, and discoverable by the Administrator and any other person.

(b) Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(c) Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

(d) Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

(e) Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

(f) Maximum true vapor pressure means the equilibrium partial pressure exerted by the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference-see § 60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM Method D2879-83 (incorporated by reference-see § 60.17);

(4) Any other method approved by the Administrator.

(g) Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323-82 (incorporated by reference-see § 60.17).

(h) Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(i) Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

(j) Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or

(2) Subsurface caverns or porous rock reservoirs.

(k) Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds into the atmosphere except those VOL's that emit only those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone. These compounds are identified in EPA statements on ozone abatement policy for SIP revisions (42 FR 35314, 44 FR 32042, 45 FR 32424, and 45 FR 48941).

(l) Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

**§ 60.112b Standard for volatile organic compounds (VOC).**

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(I) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the

purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in § 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in § 60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, § 60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§ 60.18)

of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m<sup>3</sup> which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in § 60.114b of this subpart.

#### **§ 60.113b Testing and procedures.**

The owner or operator of each storage vessel as specified in § 60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of § 60.112b.

(a) After installing the control equipment required to meet § 60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in § 60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel

is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet § 60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph

(b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4)(i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm<sup>2</sup> per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<sup>2</sup> per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of § 60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity

to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.112b (a)(3) or (b)(2) (other than a flare) is exempt from § 60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 EC is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, § 60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]



#### **§ 60.114b Alternative means of emission limitation.**

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in § 60.112b, the Administrator will publish in the Federal Register a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112b.

#### **§ 60.115b Reporting and recordkeeping requirements.**

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report

shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by § 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with § 60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with § 60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with § 60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by § 60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by § 60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under § 60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

#### **§ 60.116b Monitoring of operations.**

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in § 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing

the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m<sup>3</sup> is subject to no provision of this subpart other than those required by this paragraph.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m<sup>3</sup> but less than 151 m<sup>3</sup> storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference-see § 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM Method D2879-83 (incorporated by reference-see § 60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid

compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM Method D2879-83 (incorporated by reference-see § 60.17);

or

(ii) ASTM Method D323-82 (incorporated by reference-see §60.17);

or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specifications of § 60.112b is exempt from the requirements of paragraphs (c) and (d) of this section.

#### **§ 60.117b Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§ 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

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[Page 338]

## TITLE 40--PROTECTION OF ENVIRONMENT

### CHAPTER I--ENVIRONMENTAL PROTECTION AGENCY

#### PART 60--STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES--Table of Contents

##### Subpart UU--Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture

Sec. 60.470 Applicability and designation of affected facilities.

Source: 47 FR 34143, Aug. 6, 1982, unless otherwise noted.

- (a) The affected facilities to which this subpart applies are each saturator and each mineral handling and storage facility at asphalt roofing plants; and each asphalt storage tank and each blowing still at asphalt processing plants, petroleum refineries, and asphalt roofing plants.
- (b) Any saturator or mineral handling and storage facility under paragraph (a) of this section that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart. Any asphalt storage tank or blowing still that processes and/or stores asphalt used for roofing only or for roofing and other purposes, and that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart.

Any asphalt storage tank or blowing still that processes and/or stores only nonroofing asphalts and that commences construction or modification after May 26, 1981, is subject to the requirements of this subpart.

Sec. 60.471 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Afterburner (A/B) means an exhaust gas incinerator used to control emissions of particulate matter.  
Asphalt processing means the storage and blowing of asphalt.

Asphalt processing plant means a plant which blows asphalt for use in the manufacture of asphalt products.

Asphalt roofing plant means a plant which produces asphalt roofing products (shingles, roll roofing, siding, or saturated felt).

Asphalt storage tank means any tank used to store asphalt at asphalt roofing plants, petroleum refineries, and asphalt processing plants. Storage tanks containing cutback asphalts (asphalts diluted with solvents to reduce viscosity for low temperature applications) and emulsified asphalts (asphalts dispersed in water with an emulsifying agent) are not subject to this regulation.

Blowing still means the equipment in which air is blown through asphalt flux to change the softening point and penetration rate.

Catalyst means a substance which, when added to asphalt flux in a blowing still, alters the penetrating-softening point relationship or increases the rate of oxidation of the flux.

Coating blow means the process in which air is blown through hot asphalt flux to produce coating asphalt. The coating blow starts when the air is turned on and stops when the air is turned off.

Electrostatic precipitator (ESP) means an air pollution control device in which solid or liquid particulates in a gas stream are charged as they pass through an electric field and precipitated on a collection surface.

High velocity air filter (HVAF) means an air pollution control filtration device for the removal of sticky, oily, or liquid aerosol particulate matter from exhaust gas streams.

Mineral handling and storage facility means the areas in asphalt roofing plants in which minerals are unloaded from a carrier, the conveyor transfer points between the carrier and the storage silos, and the storage silos.

Saturator means the equipment in which asphalt is applied to felt to make asphalt roofing products. The term saturator includes the saturator, wet looper, and coater.

Sec. 60.472 Standards for particulate matter.

- (a) On and after the date on which Sec. 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any saturator:
  - (1) Particulate matter in excess of: (i) 0.04 kilograms of particulate per megagram of asphalt shingle or mineral-surfaced roll roofing produced, or (ii) 0.4 kilograms per megagram of saturated felt or smooth-surfaced roll roofing produced;
  - (2) Exhaust gases with opacity greater than 20 percent; and
  - (3) Any visible emissions from a saturator capture system for more than 20 percent of any period of consecutive valid observations totaling 60 minutes. Saturators that were constructed before November 18, 1980, and that have not been reconstructed since that date and that become subject to these standards through modification are exempt from the visible emissions standard. Saturators that have been newly constructed or reconstructed since November 18, 1980 are subject to the visible emissions standard.
- (b) On and after the date on which Sec. 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blowing still:
  - (1) Particulate matter in excess of 0.67 kilograms of particulate per megagram of asphalt charged to the still when a catalyst is added to the still; and
  - (2) Particulate matter in excess of 0.71 kilograms of particulate per megagram of asphalt charged to the still when a catalyst is added to the still and when No. 6 fuel oil is fired in the afterburner; and
  - (3) Particulate matter in excess of 0.60 kilograms of particulate per megagram of asphalt charged to the still during blowing without a catalyst; and

- (4) Particulate matter in excess of 0.64 kilograms of particulate per megagram of asphalt charged to the still during blowing without a catalyst and when No. 6 fuel oil is fired in the afterburner; and
  - (5) Exhaust gases with an opacity greater than 0 percent unless an opacity limit for the blowing still when fuel oil is used to fire the afterburner has been established by the Administrator in accordance with the procedures in Sec. 60.474(k).
- (c) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any asphalt storage tank exhaust gases with opacity greater than 0 percent, except for one consecutive 15-minute period in any 24-hour period when the transfer lines are being blown for clearing. The control device shall not be bypassed during this 15-minute period. If, however, the emissions from any asphalt storage tank(s) are ducted to a control device for a saturator, the combined emissions shall meet the emission limit contained in paragraph (a) of this section during the time the saturator control device is operating. At any other time the asphalt storage tank(s) must meet the opacity limit specified above for storage tanks.
  - (d) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any mineral handling and storage facility emissions with opacity greater than 1 percent.

Sec. 60.473 Monitoring of operations.

- (a) The owner or operator subject to the provisions of this subpart, and using either an electrostatic precipitator or a high velocity air filter to meet the emission limit in Sec. 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature of the gas at the inlet of the control device. The temperature monitoring instrument shall have an accuracy of  $\pm 15^{\circ}\text{C}$  over its range.

[[Page 340]]

- (b) The owner or operator subject to the provisions of this subpart and using an afterburner to meet the emission limit in Sec. 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature in the combustion zone of the afterburner. The monitoring instrument shall have an accuracy of  $\pm 10^{\circ}\text{C}$  over its range.
- (c) An owner or operator subject to the provisions of this subpart and using a control device not mentioned in paragraphs (a) and (b) of this section shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may require continuous monitoring and will determine the process parameters to be monitored.
- (d) The industry is exempted from the quarterly reports required under Sec. 60.7(c). The owner/operator is required to record and report the operating temperature of the control device during the performance test and, as required by Sec. 60.7(d), maintain a file of the temperature monitoring results for at least two years.

Indiana Department of Environmental Management  
Office of Air Management

Technical Support Document (TSD)  
for a Federally Enforceable Operating Permit (FESOP)

**Source Background and Description**

<b>Source Name:</b>	<b>Building Materials Manufacturing Corporation</b>
<b>Source Location:</b>	<b>500 North Roeske Avenue, Michigan City, Indiana 46360</b>
<b>County:</b>	<b>LaPorte</b>
<b>SIC Code:</b>	<b>2952</b>
<b>Operation Permit No.:</b>	<b>F 091-10904-00051</b>
<b>Permit Reviewer:</b>	<b>Frank P. Castelli</b>

The Office of Air Management (OAM) has reviewed a FESOP application from Building Materials Manufacturing Corporation relating to the construction and operation of a roof shingle manufacturing source.

**Permitted Emission Units and Pollution Control Equipment**

There are no permitted facilities operating at this source during this review process.

**Unpermitted Emission Units and Pollution Control Equipment**

There are no unpermitted facilities operating at this source during this review process.

**New Emission Units and Pollution Control Equipment Receiving Prior Approval**

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

- (a) One (1) flux asphalt heater, known as FAHRENHEIT-1, using waste heat from the thermal oxidizer, known as TO-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 60,197 pounds of asphalt per hour.
- (b) One (1) asphalt blow still, known as BS-1, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, to be installed in 1999, capacity: 60,197 pounds of blown asphalt per hour.
- (c) Two (2) bulk asphalt flux storage tanks, known as FST-1 and FST-2, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 250,000 gallons of asphalt, each.



- (d) Two (2) blown coating storage tanks, known as CST-1 and CST-2, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 42,000 gallons of coatings, each.
- (e) One (1) shingle machine, known as SM-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1 and also equipped with a baghouse for particulate matter control, known as V10, capacity: 320,729 pounds of asphalt shingles per hour.
- (f) Six (6) limestone filler silos, known as LFS-1 through LFS-6, to be installed in 1999, each equipped with a baghouse for particulate matter control, exhausted through V1 through V6, storage capacity: 300 tons of limestone each, throughput: 19,337.5 pounds of limestone per hour each.
- (g) One (1) cold filler hopper, known as CFH-1, to be installed in 1999, equipped with a baghouse for particulate matter control, exhausted through V7, storage capacity: 70 tons of limestone, throughput: 116,025 pounds of limestone per hour.
- (h) Two (2) sand silos, known as SS-1 and SS-2, to be installed in 1999, each equipped with a baghouse for particulate matter control, exhausted through V8 and V9, capacity: 125 tons of sand each, throughput 10,319.5 pounds of sand per hour each.
- (i) One (1) natural gas-fired boiler, known as BO-1, to be installed by December 1999, rated at 12.6 million British thermal units per hour, exhausted through Stack #S6.
- (j) One (1) natural gas-fired coating heater, known as CH-1, to be installed in 1999, rated at 7.5 million British thermal units per hour, exhausted through Stack #S3, process capacity: 250 gallons of coating asphalt per minute (15,000 gallons per hour).
- (k) One (1) natural gas-fired hot oil heater, known as HO-1, to be installed in 1999, rated at 6.0 million British thermal units per hour, exhausted through Stack #S5.

### **Insignificant Activities**

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Combustion source flame safety purging on startup.
- (b) Application of oils, greases lubricants or other nonvolatile materials applied as temporary protective coatings.
- (c) Closed loop heating and cooling systems.
- (d) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1 percent by volume.
- (e) Forced and induced draft cooling tower system not regulated under a NESHAP.
- (f) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

- (g) Heat exchanger cleaning and repair.
- (h) Covered conveyors for limestone conveying of less than or equal to 7,200 tons per day for sources other than mineral processing plants constructed after August 31, 1983;
- (i) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (j) Stationary fire pumps.
- (k) Purge double block and bleed valves.
- (l) Filter or coalescer media changeout.
- (m) Four (4) natural gas-fired space heaters, known as H-1 through H-4, rated at 2.5 million British thermal units per hour each..

#### **Existing Approvals**

There are no existing approvals for this source.

#### **Enforcement Issue**

There are no enforcement actions pending.

#### **Recommendation**

The staff recommends to the Commissioner that the FESOP be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete FESOP application for the purposes of this review was received on April 26, 1999. Additional information was received on August 6 and 10, 1999.

#### **Emission Calculations**

See pages 1 through 9 of Appendix A of this document for detailed emissions calculations. Storage tank emissions are included in the asphalt coating process.

#### **Potential To Emit**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	3,510
PM <sub>10</sub>	3,511
SO <sub>2</sub>	44.7
VOC	2,673
CO	93.1
NO <sub>x</sub>	24.7

Note: For the purpose of determining Title V applicability for particulates, PM<sub>10</sub>, not PM, is the regulated pollutant in consideration.

HAPs	Potential To Emit (tons/year)
Benzene	0.0006
Formaldehyde	0.022
Toluene	0.001
Hexane	0.521
Dichlorobenzene	0.0003
Lead Compounds	0.0001
Cadmium Compounds	0.0003
Chromium Compounds	0.0004
Manganese Compounds	0.0001
Nickel Compounds	0.0006
TOTAL	0.546

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM<sub>10</sub> and VOC are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.
- (b) Fugitive Emissions  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

#### Actual Emissions

No previous emission data have been received from this new source.

### Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	<b>Limited Potential to Emit</b> (tons/year)						
Process/facility	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
Process Combustion	0.217	0.869	0.069	0.629	9.60	11.4	0.216
Processes w/Thermal Oxidizer & Shingle Machine Baghouse (V10)	18.7	18.7	44.6	53.4	79.8	8.96	0.248
Limestone Silos, Cold Filler Hopper & Sand Silos with baghouses (V1 - V9)	27.8	27.8	0.00	0.00	0.00	0.00	0.00
Insignificant Activities	2.08	2.33	0.026	0.241	3.68	4.38	0.082
Total Emissions	48.8	49.7 (<100)	44.7	54.3 (<100)	93.1	24.7	0.546

PM<sub>10</sub> emissions from the entire source including the insignificant activities shall be limited to less than one hundred (100) tons per year. The VOC emissions from the blow still and shingle machine shall be limited to less than one hundred (100) tons per year by the operation of the thermal oxidizer with a minimum overall control efficiency of 96.3%.

### County Attainment Status

The source is located in LaPorte County.

Pollutant	Status
PM <sub>10</sub>	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. LaPorte County has been designated as attainment or unclassified for ozone.

### **Federal Rule Applicability**

- (a) This source is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.470, Subpart UU. Attached is a copy of this rule.
  - (1) The shingle production line meets the PM emission limitations of 0.04 kilograms per megagram of asphalt shingle produced of this subpart. The emission factor 0.088 pounds per ton is less than 0.04 kilograms per megagram and therefore the shingle production complies with the PM emission limit of this NSPS. The opacity shall be limited to twenty percent (20%).
  - (2) The blow still may operate with or without a catalyst and meets the PM emission limitation of 0.67 or 0.60 kilograms per megagram of asphalt charged to the still with or without a catalyst, respectively. The emission factor 0.0403 pounds per ton is less than 0.60 and 0.67 kilograms per megagram and therefore complies with the PM emission limit of this NSPS with or without the catalyst.
- (b) The two (2) bulk asphalt flux storage tanks, known as FST-1 and FST-2, to be installed in 1999, with a capacity of 250,000 gallons of asphalt, each are subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.110b, Subpart Kb) since their capacities are greater than 151 cubic meters. Since the materials stored in these tanks have a vapor pressures less than 3.5 kiloPascals, these tanks are subject to only 40 CFR Part 60.116b, paragraphs (a) and (b) which require record keeping.
- (c) Two (2) blown coating storage tanks, known as CST-1 and CST-2 to be installed in 1999 with a capacity of 42,000 gallons of coatings each are subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.110b, Subpart Kb) since their capacities are greater than 151 cubic meters. Since the materials stored in these tanks have a vapor pressures less than 3.5 kiloPascals, these tanks are subject to only 40 CFR Part 60.116b, paragraphs (a) and (b) which require record keeping.
- (d) The 12.6 million British thermal units per hour rated boiler, BO-1, to be installed in 1999 is subject to the New Source Performance Standard (NSPS), 326 IAC 12, (40 CFR 60.40, Subpart Dc - Standards of Performance for Small Industrial - Commercial - Institutional Steam Generating Units) since the boiler was constructed after June 9, 1989 and is rated between 10 and 100 million British thermal units per hour. The amount and type of fuel combusted each day must be recorded.
- (e) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

### **State Rule Applicability - Entire Source**

326 IAC 2-1-3.4 (New source toxics control)

The potential single and combination of HAPs emissions from the entire source are less than ten (10) and twenty-five (25) tons per year, respectively. Therefore, the requirements of this rule do not apply to this source.

### 326 IAC 2-6 (Emission Reporting)

This source is located in LaPorte County, which is not one of the listed counties for this rule. Additionally, the source will not emit CO, VOC, NO<sub>x</sub>, PM<sub>10</sub>, or SO<sub>2</sub> at greater than a 100 ton per year rate. Therefore, 326 IAC 2-6 does not apply.

The source will be required to annually submit a statement of the actual emissions of all federally regulated pollutants from the source, for the purpose of fee assessment.

### 326 IAC 2-8-4 (FESOP)

Pursuant to this rule, the amount of PM<sub>10</sub> shall be limited to less than one hundred (100) tons per year for the entire source. PM<sub>10</sub> emissions from the thermal oxidizer, known as TO-1, exhausted through Stack #S1, the six (6) limestone filler silos, known as LFS-1 through LFS-6, exhausting through V1 through V6, the cold filler hopper, known as CFH-1, exhausting through V7, the two (2) sand silos, known as SS-1 and SS-2, exhausting through V8 and V9 and the shingle machine, known as SM-1, exhausting through V10 shall not exceed a total of 22.1 pounds per hour (96.8 tons per year). Therefore, the Part 70 rules (326 IAC 2-7) do not apply.

### 326 IAC 5-1 (Opacity)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

## State Rule Applicability - Individual Facilities

### 326 IAC 6-2 (Particulate emission limitations for sources of indirect heating)

The 12.6 million British thermal units per hour rated boiler, known as BO-1, to be constructed in 1999 is subject 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to:

$$Pt = 1.09/Q^{0.26}$$

where, Q = the total source maximum operating capacity in million British thermal units per hour

$$Pt = 1.09/(12.6 \text{ mmBtu/hr})^{0.26} = 0.564 \text{ pounds per million British thermal units}$$

Allowable PM emissions = (0.564 lbs/mmBTU)\*(12.6 mmBTU/hr)\*(8760 hr/yr)\*(1 ton/2000 lbs) = 31.1 tons per year. The potential PM emissions from this boiler are 0.105 tons per year.

Based on this calculation, the potential PM emissions are less than the allowable emissions, therefore, this boiler complies with the rule.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the emission units listed below shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

or

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The control equipment shall be in operation at all times each facility is in operation, in order to comply with these limits, unless otherwise noted as follows:

<b>Operation</b>	<b>Process Weight Rate (tons per hour)</b>	<b>Allowable PM Emission Rate (pounds per hour)</b>	<b>Potential PM Emission Rate After Controls (pounds per hour)</b>
Blow Still	30.1	40.0	1.21
Each Limestone Silo	9.67	18.75	0.715
Cold Filler Hopper	58.0	46.0	1.28
Each Sand Silo	5.16	12.3	0.382
Shingle Machine	160.4	56.1	1.64
Asphalt Coating Process	30.1	40.0	1.41

Thus all of the process operation comply with this rule.

326 IAC 7-1.1-2 (Sulfur dioxide emission limitations)

The four (4) space heaters on natural gas plus the 12.6 million British thermal units per hour boiler have a potential sulfur dioxide emission rate of less than twenty-five (25) tons per year. Therefore, these facilities are not subject to the requirements of this rule.

The process emission from the asphalt blow still are not subject to this rule since the sulfur dioxide emissions are due to the blowing process rather than combustion.

326 IAC 8-1-6 (New facilities: General reduction requirements)

Since the potential VOC emissions from the blow still and the asphalt coating process are each greater than twenty-five (25) tons per year and no other 326 IAC 8 rules apply, 326 IAC 8-1-6 is applicable to these proposed operations.

Pursuant to 326 IAC 8-1-6 (New facilities: General reduction requirements):

- (a) BACT has been determined to be the thermal oxidizer, and
- (b) The volatile organic compound (VOC) emissions shall not exceed 98.9 tons per twelve (12) consecutive month period for all facilities equipped with the thermal oxidizer to be calculated by the following equation:

VOC emissions = Input VOC \*(1- overall control efficiency of the thermal oxidizer).

#### 326 IAC 9-1 (Carbon Monoxide Emission Limits)

This source is not a petroleum refining source, a ferrous metal smelter or a refuse incinerator, and therefore, this asphalt shingle manufacturing source is not subject to the requirements of this rule.

### Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

### Compliance Monitoring

- (a) The baghouses on the six (6) limestone and two (2) sand storage silos as well as the cold feed hopper and shingle machine have applicable compliance monitoring conditions as specified below:

The Permittee shall record the total static pressure drop across each of the baghouses, known as V1 - V10, controlling the asphalt shingle manufacturing processes at least once per shift when the manufacturing processes are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 0.5 to 5.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.



- (b) The Permittee shall continuously monitor and record the temperature of the gas at the inlet of the shingle machine baghouse, known as V10. The temperature monitoring instrument shall have an accuracy of  $\pm 15$  degrees Celsius over its range.
- (c) The Permittee shall continuously monitor and record the temperature in the combustion zone of the thermal oxidizer, known as TO-1. The monitoring instrument shall have an accuracy of  $\pm 10$  degrees Celsius over its range.
- (d) Daily visible emissions notations of the Stacks S#1 and V1 through V10 exhausts shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.
- (e) The Permittee shall record the exhaust temperature of the thermal oxidizer, at least once daily when the asphalt shingle manufacturing processes are in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the exhaust temperature shall be maintained at a minimum operating temperature of 1,200 degrees Fahrenheit or a temperature range determined by the latest stack test to maintain at least 96.3 percent destruction of VOC captured. The Compliance Response Plan for this unit shall contain troubleshooting contingency and corrective actions for when the temperature reading is outside of the specified temperature or range of temperatures for any one reading.

These monitoring conditions are necessary because the thermal oxidizer must operate properly to ensure compliance with 326 IAC 2-8 (FESOP) and are required by NSPS Subpart UU.

### **Air Toxic Emissions**

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) FESOP Application Form GSD-08.

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations on pages 4, 6 and 8 of 9 for detailed air toxic calculations.

### **Conclusion**

The operation of this roof shingle manufacturing source shall be subject to the conditions of the attached proposed FESOP No.: F091-10904-00051.

## Indiana Department of Environmental Management Office of Air Management

### Addendum to the Technical Support Document for Federally Enforceable State Operating Permit (FESOP)

<b>Source Name:</b>	<b>Building Materials Manufacturing Corporation</b>
<b>Source Location:</b>	<b>505 North Roeske Avenue, Michigan City, Indiana 46360</b>
<b>County:</b>	<b>LaPorte</b>
<b>FESOP:</b>	<b>F 091-10904-00051</b>
<b>SIC Code:</b>	<b>2952</b>
<b>Permit Reviewer:</b>	<b>Frank P. Castelli</b>

On August 17, 1999 the Office of Air Management (OAM) had a notice published in the News Dispatch, Michigan City Indiana, stating that Building Materials Manufacturing Corporation had applied for a Federally Enforceable State Operating Permit (FESOP) to operate a roof shingle manufacturing source with a thermal oxidizer and ten (10) baghouses as pollution control devices. The notice also stated that OAM proposed to issue a FESOP for this operation and provided information on how the public could review the proposed FESOP and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this FESOP should be issued as proposed.

On September 9, 1999, Fred Bright of GAF Materials Corporation, submitted comments on the proposed FESOP. The comments are as follows. The permit language, if changed, has deleted language as ~~strikeouts~~ and new language as **bolded**.

#### **Comment 1:**

FESOP Permit, Page 1 of 40 (and numerous locations throughout the permit): Change the facility address from 500 North Roeske Avenue to 505 North Roeske Avenue. This number change has been requested by the Post Office.

#### **Response 1:**

The address has been changed throughout the permit as requested.

#### **Comment 2:**

FESOP Permit, Page 5 of 40, Section A, Item A.1: Staffing is currently underway for this new facility. Please be aware that the listed "Authorized Individual" is located at the Corporate Office in New Jersey. A plant level "Authorized Individual" will be designated when the individual for this position is hired. This update will be submitted to IDEM as soon as the information is available. A current site telephone number does exist: 219 - 878 - 5888 (Human Resources).

#### **Response 2:**

The current authorized individual has been retained in Condition A.1. The name can be changed as required whenever necessary by Administrative Amendment upon request.

**Comment 3:**

FESOP Permit, Page 31 of 40, Section D.1.16(b): This Section requires a continuous temperature monitor and recorder to be installed on the inlet to the shingle line baghouse and Section D.1.19 requires a continuous temperature monitor and recorder to be installed for the combustion zone of the thermal oxidizer.

I read this as an interpretation of 40 CFR 60, Subpart UU - *Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture, Section 60.473 Monitoring of Operations*. Based on my experience in the roofing industry and my understanding of Subpart UU, I agree that a continuous temperature monitor is required for the combustion zone of the thermal oxidizer, but I do not believe that temperature monitoring is required on the inlet to the shingle line baghouse.

I offer the following explanation for my position: Attached is Figure 2-3 from AP-42, Section 11.2 Asphalt Roofing. I have marked the drawing to separate the manufacture of roofing shingles into the three major production steps:

- 1) (Part A) - the Asphalt Saturator,
- 2) (Part B) - the Coater,
- 3) (Part C) - Granules & Sand Applicators (surfacing operation).

Please note that the drawing specifically indicates that the Saturator Enclosure and the Coater "vent to control equipment".

Part A

The "Asphalt Saturator" is used in the production of "organic" based shingles (uses a cellulose fiber base substrate – like a grocery bag). This substrate is first dipped or sprayed with a light molecular weight asphalt to "saturate" it before the final surface layer of asphalt is applied in the Coater. This asphalt is heated to liquefy it for application and the heating produces asphalt fumes. These fumes are collected and vented to a control device.

[The Michigan City facility will not manufacture organic base shingles. The machine therefore, does not have an Asphalt Saturator section. Michigan City will use a non-woven fiberglass strand substrate – no saturation step is required.]

Part B

The "Coater" is used to apply the outer layer of asphalt to the substrate sheet – this step is used for both the organic shingle and the fiber glass shingle. This operation is basically the same for either product. This asphalt is heated to liquefy it for application and the heating produces asphalt fumes. These fumes are collected and vented to a control device.

Part C

The "Granules Applicator" and "Sand Applicator" steps together are typically referred to as the "surfacing section" or "surfacing operation" - granules are applied to the top surface of the shingle and sand is applied to the bottom surface of the shingle. Venting to a control device is not specifically indicated on Figure 2-3, but the common practice is to collect any fugitive dust that is produced in the surfacing step and vent it to a dust collector. This dust collector is separate from the asphalt fume control equipment used for the Asphalt Saturator or Coater. (Asphalt fumes and dust are not normally vented to a common control device – the asphalt fumes will condense on the interior surfaces of a control device, to which the dust will stick, eventually "blinding" the control device.)

When Subpart UU addresses particulate from the blowstill and the roofing manufacturing process, it is addressing the condensable asphalt fumes that are emitted from the blowstill asphalt processing and from the application of asphalt to the substrate web – both of which are to be reported as particulate. It does not address the particulate emissions from the surfacing section dust collector. The surfacing section dust control device should be handled like any other dust collector. Not included with the asphalt fume particulate of Subpart UU.

The standard particulate sampling method (Method 5) was modified to Method 5A in order to address the sampling of exhaust streams containing asphalt fumes. Method 5A is specifically stated as the particulate test method to be used in 40 CFR 60.474 “Test methods and procedures”.

When Subpart UU was written, the normal control techniques for roofing manufacture were:

- a) Blowstills vented to afterburners or some other fume combustion device,
- b) Saturators and Coaters vented to electrostatic precipitators or coalescing filter type devices.

(See attached excerpt from EPA roofing industry study EPA-450/3-80-021a.)

The EPA specifically wanted the blowstill afterburner continuously monitored and specified the installation of a temperature recording device that would record the temperature in the combustion zone. The EPA carried this concept forward and required the use of a temperature recorder for the inlet of the fume control device used to control asphalt fumes from the saturator and/or coater operation. In 40 CFR 60.473 (a), the requirement to include a temperature recorder on the control device inlet also references the specific control devices commonly used for saturator/coater asphalt fume control: electrostatic precipitator and high velocity air filter. Neither of these are being used at Michigan City.

The Michigan City Plant will be venting the asphalt fumes from both the blowstill and the shingle production line to a common control device – a thermal oxidizer (TO-1). The installation of a temperature recorder on this device will satisfy the fume control device monitoring requirement of Subpart UU.

Therefore, I do not believe a temperature recorder is required on the surfacing section dust collector.

### Response 3:

NSPS Subpart UU does not require monitoring of the inlet temperature to the baghouse for the shingle machine but does require, as stated in a Condition D.1.19, that a continuous temperature monitor and recorder be installed to monitor the combustion zone temperature of the thermal oxidizer. Therefore, Condition D.1.16(b) has been deleted as follows:

#### D.1.16 Parametric Monitoring (NSPS Subpart UU)

- (a) The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the asphalt shingle manufacturing processes, at least once per day when the asphalt shingle manufacturing processes are in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 0.5 and 5.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

- (b) ~~The Permittee shall continuously monitor and record the temperature of the gas at the inlet of the shingle machine baghouse, known as V10. The temperature monitoring instrument shall have an accuracy of  $\pm 15$  degrees Celsius over its range.~~

**Comment 4:**

Technical Support Document (TSD), Page 1 of 10, Item (a): In Line #1, "FAHRENHEIT-1" should be "FAH-1".

**Response 4:**

Item (a) of Condition A..2 and D.1 has been changed as shown below:

- (a) One (1) flux asphalt heater, known as FAHRENHEIT-1, using waste heat from the thermal oxidizer, known as TO-1, to be installed in 1999, equipped with one (1) natural gas-fired, low NO<sub>x</sub> burner, thermal oxidizer, known as TO-1, rated at 30.0 million British thermal units per hour, exhausted through Stack #S1, capacity: 60,197 pounds of asphalt per hour.

Upon further review, the OAM has decided to make the following changes to the FESOP: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded**):

1. Condition D.1.9 was revised as follows to clarify that the required overall control efficiency of the thermal oxidizer includes both capture and destruction efficiencies.

**D.1.9 Thermal Oxidizer Operation**

The thermal oxidizer shall operate at all times that any of the facilities listed in Section D.1, except the silos and cold filler hopper (items f through h) are operated. When operating, the thermal oxidizer shall maintain a minimum operating temperature of 1,200 degrees Fahrenheit or a temperature, fan amperage and duct velocity determined in a stack test to maintain a minimum ninety-six and three tenths percent (96.3%) overall **(capture and destruction)** control of the volatile organic compound (VOC).

2. Condition D.1.12 was revised as follows to add the requirement to test PM<sub>10</sub> as well as PM. The PM<sub>10</sub> testing is required to indicate compliance with the PM<sub>10</sub> limits in Condition D.1.5. Part B of this condition was revised to add that the testing shall be performed when a catalyst is utilized to insure that the testing reflects the worst case emissions.

**D.1.12 Testing Requirements [NSPS Subpart UU] [326 IAC 12]**

- (a) Part Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) and 326 IAC 12 (New Source Performance Standards) compliance tests for the shingle machine shall be performed for opacity, ~~and PM~~ **and PM**, and PM<sub>10</sub> within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner. The Office of Air Management (OAM) shall be notified of the actual

test date at least two (2) weeks prior to the date, a test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test, and all test reports must be received by the OAM within 45 days of completion of the testing, pursuant to that rule.

- (b) Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) and 326 IAC 12 (New Source Performance Standards) compliance tests for the blow still shall be performed for PM **and** PM<sub>10</sub> within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. **The testing shall be performed when a catalyst is utilized.** These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner. The Office of Air Management (OAM) shall be notified of the actual test date at least two (2) weeks prior to the date, a test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test, and all test reports must be received by the OAM within 45 days of completion of the testing, pursuant to that rule.
- (c) These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facilities are in compliance.

- 3. Condition D.1.13 was revised as follows to require stack testing of any two (2) limestone filler silos rather than only testing one (1) silo. Stack testing guidance requires that a minimum of two (2) units be tested when there are more than five (5) of the same emission units. Part (b) of Condition D.1.13 has been added to require VOC testing of the thermal oxidizer n

D.1.13 Testing Requirements [326 IAC 2-8-5(a)(1), (4)][326 IAC 2-1.1-11]

- (a) No later than 180 days after initial start-up, the Permittee shall perform PM and PM<sub>10</sub> testing of ~~one (1)~~ **any two (2)** of six (6) limestone filler silos, exhaust through V1 - V6, one (1) of the two (2) sand silos, exhausting through V8 and V9, the cold filler hopper, the thermal oxidizer exhaust Stack #S1 utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM and Methods 201 or 201A and 202 (40 CFR 51, Appendix M) for PM<sub>10</sub>, or other methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facilities are in compliance.
- (b) **No later than 180 days after initial start-up, the Permittee shall perform VOC testing of the thermal oxidizer exhausting through Stack #S1 to determine the capture and destruction efficiencies for overall VOC control utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the facilities are in compliance.**
- (bc) The Permittee is not required to test the storage tanks by this permit. However, IDEM may require compliance testing when necessary to determine if these facilities are in compliance. If testing is required by IDEM, compliance shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

4. Condition D.1.5 was revised to cite a PM<sub>10</sub> limit for each facility rather than the proposed overall PM<sub>10</sub> limit of 22.1 pounds per hour for the facilities listed in Section D.1. The individual limits were included so that the stack tests could determine if compliance is achieved simultaneously with the overall FESOP PM<sub>10</sub> limit. Each facility's PM<sub>10</sub> emission limit was determined from the allowable PM emission limit for that facility pursuant to 326 IAC 6-3-2 divided by the total allowable PM emission rate for all facilities, without double counting the blow still and asphalt coating process emissions from Stack#S1, times 22.1 pounds of PM<sub>10</sub> per hour. The revised condition is as follows:

**D.1.5 PM<sub>10</sub> [326 IAC 2-8-4]**

~~Pursuant to 326 IAC 2-8-4, PM<sub>10</sub> emissions from the thermal oxidizer, known as TO-1, exhausted through Stack #S1, the six (6) limestone filler silos, known as LFS-1 through LFS-6, exhausting through Stacks V1 through V6, the cold filler hopper, known as CFH-1, exhausting through Stack V7, the two (2) sand silos, known as SS-1 and SS-2, exhausting through Stack V8 and V9 and the shingle machine, known as SM-1, exhausting through Stack V10 shall not exceed a total of 22.1 pounds per hour (96.8 tons per year). Compliance with this limit will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) do not apply.~~ **shall not exceed the values stated in the following table. The combined PM<sub>10</sub> emissions from the listed facilities shall not exceed a total of 22.1 pounds per hour (96.8 tons per year). Compliance with these PM<sub>10</sub> limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) do not apply.**

Operation	PM <sub>10</sub> Emission Rate (pounds per hour)
Thermal Oxidizer (Stack #S1)	3.17
Each Limestone Filler Silo (V1 - V6)	1.48 each
Cold Filler Hopper (V7)	3.64
Each Sand Silo (V8 & V9)	0.973 each
Shingle Machine (V10)	4.44

**Appendix A: Emissions Calculations  
Process Emissions**

Page 1 of 9 TSD App A

**Company Name: Building Materials Manufacturing Corporation  
Address: 500 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP: F 091-10904  
Plt ID: 091-00051  
Reviewer: Frank P. Castelli  
Date: April 26, 1999**

**Processes Controlled by the Thermal Oxidizer, TO-1**

Asphalt Blow Still (BS-1)	Including Combustion from Thermal Oxidizer
30.1	tons/hr

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lbs/ton After Controls	0.040	0.040	0.338	0.068	0.136	0.605
Potential Emission in tons/yr After Controls	5.27	5.27	44.6	8.96	17.9	79.8
VOC Control Efficiency 98.00%						
Potential Emissions in tons/yr Before Controls	5.27	5.27	44.6	8.96	896.5	79.8

Note: Emission factors after controls are based on the average stack test results from a February 5-7, 1991 GAF Building Corp. for a UIP Engineered Products, Inc. Thermal Fluid Heater/Afterburner, Baltimore MD Plant

Asphalt Coating Process	
160.36	tons/hr

	Pollutant		
	PM	PM10	VOC
Emission Factor in lbs/ton After Controls	0.0088	0.0088	0.0506
Potential Emission in tons/yr After Controls	6.18	6.18	35.54
VOC Control Efficiency 98.00%			
Potential Emissions in tons/yr Before Controls	6.18	6.18	1777.1

Note: Emissions Factors after control are based on the average stack test results from a August 7 - 8, 1991 GAF Building Material Corp. for the No. 2 thermal oxidizer at the Millis, MA plant



Company Name: Building Materials Manufacturing Corporation  
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FESOP: F 091-10904  
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Date: April 26, 1999

Process Description	Unit ID	Control Efficiency (%)	Grain Loading per Act Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	Emission Rate before Control (lbs/hr)	Emission Rate before Control (tons/yr)	Emission Rate after Control (lbs/hr)	Emission Rate after Control (tons/yr)
Limestone Silo	#V1	99.0%	0.069	1200.0	71.0	310.85	0.710	3.11
Limestone Silo	#V2	99.0%	0.069	1200.0	71.0	310.85	0.710	3.11
Limestone Silo	#V3	99.0%	0.069	1200.0	71.0	310.85	0.710	3.11
Limestone Silo	#V4	99.0%	0.069	1200.0	71.0	310.85	0.710	3.11
Limestone Silo	#V5	99.0%	0.069	1200.0	71.0	310.85	0.710	3.11
Limestone Silo	#V6	99.0%	0.069	1200.0	71.0	310.85	0.710	3.11
Cold Filler Hopper	#V7	99.0%	0.079	1875.0	127.0	556.10	1.270	5.56
Sand Silo	#V8	99.0%	0.037	1200.0	38.1	166.69	0.381	1.67
Sand Silo	#V9	99.0%	0.037	1200.0	38.1	166.69	0.381	1.67
Shingle Machine	#V10	99.0%	0.019	10050.0	163.7	716.88	1.637	7.17
<b>Total</b>					<b>792.6</b>	<b>3471.5</b>	<b>7.9</b>	<b>34.7</b>

#### Methodology

Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (sq. ft.) ((cub. ft./min.)/sq. ft.) (60 min/hr) (lb/7000 grains)  
Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Emission Rate in lbs/hr (before controls) = Emission Rate (after controls): (lbs/hr)/(1-control efficiency)  
Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

#### Allowable Rate of Emissions

		Process Rate (lbs/hr)	Process Weight Rate (tons/hr)	Allowable Emissions (lbs/hr)
Limestone Silos	#V1 - #V6, each	19337.5	9.67	18.75
Cold Filler Hopper	#V7	116,025	58.01	45.97
Sand Silos	#V8 & V9, each	10319.5	5.16	12.31
Shingle Machine	#V10	320,729	160.36	56.14

#### Methodology

Allowable Emissions =  $4.10(\text{Process Weight Rate})^{0.67}$  for process weight rates up to 60,000 pounds/hour

Allowable Emissions =  $55(\text{Process Weight Rate})^{0.11}$  - 40 for process weight rates greater than 60,000 pounds/hour

Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100  
Small Industrial Boiler

Page 3 of 9 TSD App A

**Company** Building Materials Manufacturing Corporation  
**Address** Ci 500 North Roeske Avenue, Michigan City, Indiana 46360  
**FESOP:** F 091-10904  
**Plt ID:** 091-00051  
**Reviewer:** Frank P. Castelli  
**Date:** April 26, 1999

**Boiler (12.6) + Coating Heater (7.5) + Oil Heater (6.0)**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

26.1

228.6

Emission Factor in lb/MMCF	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0 *see below	5.5	84.0
Potential Emission in tons/yr	0.217	0.869	0.069	11.4	0.629	9.60

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 4 for HAPs emissions calculations.

**Appendix A: Emissions Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Small Industrial Boiler**  
**HAPs Emissions**

Page 4 of 9 TSD App A

**Company** Building Materials Manufacturing Corporation  
**Address** 500 North Roeske Avenue, Michigan City, Indiana 46360  
**FESOP:** F 091-10904  
**Plt ID:** 091-00051  
**Reviewer:** Frank P. Castelli  
**Date:** April 26, 1999

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	0.0002	0.0001	0.0086	0.2058	0.0004

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	0.0001	0.0001	0.0002	0.0000	0.0002

Methodology is the same as page 3.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

MM BTU/HR <100  
Small Industrial Boiler

Company Building Materials Manufacturing Corporation  
Address Ci 500 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP: F 091-10904  
Plt ID: 091-00051  
Reviewer: Frank P. Castelli  
Date: April 26, 1999

Thermal Oxidizer (TO-1)

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

30.0

262.8

Pollutant						
Emission Factor in lb/MMCF	PM 1.9	PM10 7.6	SO2 0.6	NOx 50.0 *see below	VOC 5.5	CO 84.0
Potential Emission in tons/yr	0.250	1.00	0.079	6.57	0.723	11.0

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 6 for HAPs emissions calculations.

**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Small Industrial Boiler**  
**HAPs Emissions**

**Company Name Building Materials Manufacturing Corporation**  
**Address City 500 North Roeske Avenue, Michigan City, Indiana 46360**  
**FESOP: F 091-10904**  
**Plt ID: 091-00051**  
**Reviewer: Frank P. Castelli**  
**Date: April 26, 1999**

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	0.0003	0.0002	0.0099	0.2365	0.0004

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	0.0001	0.0001	0.0002	0.0000	0.0003

Methodology is the same as page 5.

The five highest organic and metal HAPs emission factors are provided above.  
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100  
Small Industrial Boiler**

Page 7 of 9 TSD App A

**Company Name Building Materials Manufacturing Corporation  
Address Ci 500 North Roeske Avenue, Michigan City, Indiana 46360  
FESOP: F 091-10904  
Plt ID: 091-00051  
Reviewer: Frank P. Castelli  
Date: April 26, 1999**

**Four (4) Space Heaters @ 2.5 mmBtu/hr each**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

10.0

87.6

Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	SO2 0.6	NOx 100.0 **see below	VOC 5.5	CO 84.0
Potential Emission in tons/yr	0.083	0.333	0.026	4.38	0.241	3.68

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 8 for HAPs emissions calculations.

**Appendix A: Emissions Calculations**

Page 8 of 9 TSD App A

**Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****HAPs Emissions****Company Name Building Materials Manufacturing Corporation****Address C1500 North Roeske Avenue, Michigan City, Indiana 46360****FESOP: F 091-10904****Plt ID: 091-00051****Reviewer: Frank P. Castelli****Date: April 26, 1999****HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	9.198E-05	5.256E-05	3.285E-03	7.884E-02	1.489E-04

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	2.190E-05	4.818E-05	6.132E-05	1.664E-05	9.198E-05

Methodology is the same as page 7.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations  
SUMMARY**

Page 9 of 9

**Company N Building Materials Manufacturing Corporation  
Address CIt 500 North Roeske Avenue, Michigan City, Indiana 46360**

**FESOP: F 091-10904**

**Plt ID: 091-00051**

**Reviewer: Frank P. Castelli**

**Date: April 26, 1999**

**Potential Emission Before Controls**

Emission Unit	Pollutant (tons/yr)					
	PM	PM-10	VOC	SO2	NOX	CO
Blow Still	5.27	5.27	895.5	44.6	8.96	79.8
Shingle Machine	716.9	716.9	0.00	0.00	0.00	0.00
Asphalt Coating Prc	6.18	6.18	1777.1	0.00	0.00	0.00
Six Limestone Filler	1884.8	1884.8	0	0.00	0.00	0.00
Cold Filler Hopper	559.0	559.0	0.00	0.00	0.00	0.00
Two Sand Silos	335.3	335.3	0	0.00	0.00	0.00
<i>Combustion</i>						
Thermal Oxidizer (Included in Blow Still)	0.250	1.00	0.723	0.079	6.57	11.0
Boiler, Coating Heater & Hot Oil Heater	0.217	0.869	0.629	0.069	11.4	9.60
<b>Subtotal</b>	3508	3508	2673	44.7	20.4	89.4
Space Heaters (Gas)	0.083	0.333	0.241	0.026	4.38	3.68
Other Insig. Activities	2	2	0	0	0	0
<b>Total</b>	3510	3511	2673	44.7	24.7	93.1

**Potential Emission After Controls**

Emission Unit	Pollutant (tons/yr)					
	PM	PM-10	VOC	SO2	NOX	CO
Blow Still	5.27	5.27	17.9	44.6	8.96	79.8
Shingle Machine	7.17	7.17	0	0.00	0.00	0.00
Asphalt Coating Prc	6.18	6.18	35.5	0.00	0.00	0.00
Six Limestone Filler	18.8	18.8	0	0.00	0.00	0.00
Cold Filler Hopper	5.59	5.59	0.00	0.00	0.00	0.00
Two Sand Silos	3.35	3.35	0	0.00	0.00	0.00
<i>Combustion</i>						
Thermal Oxidizer (Included in Blow Still)	0.250	1.00	0.723	0.079	6.57	11.0
Boiler, Coating Heater & Hot Oil Heater	0.217	0.869	0.629	0.069	11.4	9.60
Space Heaters (Gas)	0.083	0.333	0.241	0.026	4.38	3.68
Other Insig. Activities	2	2	0	0	0	0
<b>Total</b>	48.7	49.6	54.3	44.7	24.7	93.1